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ABSTRACT

In introductory psychology courses, the desire to cover content can conflict with the desire to acquaint students with psychological thinking processes. The IDEAL method is a group problem solving quiz technique which addresses both of these goals. In the process, instructors choose key concepts from a given reading and divide the class into groups of four to six students. Each member of each group then chooses a concept to specialize in, completing concept sheets which compare and contrast their concept to other assigned concepts. Groups then determine how to apply their understandings of their concepts to common situations, such as when an individual decides to accompany a group to an event that they do not believe will be enjoyable. Testing is conducted in essentially the same format, with quizzes evaluated on the basis of how aspects of the scenario exemplify the concept in action or how the students apply the concept to the scenario in order to address the question. The advantages of this method for psychology classes are that it makes use of student learning and gives them practice with problem solving, critical thinking, and group interaction skills while teaching the content of the subject area. A disadvantage is that the amount of material covered must be reduced to allow for time spent on problem solving techniques and teamwork skills. A sample concept sheet is appended. (TGI)

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Using the IDEAL Problem Solving Method in Groups

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Bransford & Stein's (1993) IDEAL problem solving model has been found to be a useful framework for encouraging students to apply concepts from psychology to specific situations. This workshop will illustrate the steps used in composing groups of students to solve problems; suggestions to the students for preparing for group problem-solving quizzes; classroom exercises to develop skills in reasoning like a psychologist and solving problems in groups; and examples of the kinds of application-oriented questions that can be asked. The potential benefits of this approach will be discussed in light of the findings of Craik & Tulving (1975) and Dansereau (1983) on levels of processing and network organization as aids to recall, as well as Sherif's (1966), Aronson's (1988) and Johnson & Johnson's (1987) work on the value of cooperative learning strategies.

Often, teaching psychology seems to be complicated by the endless proliferation of terms and jargon, not to mention the inherent breadth of the field. Particularly in Introductory Psychology courses, the desire to cover content wrestles with the desire to acquaint students with the thinking process that psychologists use to develop said content. While the group problem solving quiz method of class exercises and testing described here does not completely take the sting out of this decision making process, it does accustom students to *using* the information in their texts and lectures according to certain principles of reasoning; which appears to enhance their ability to recall and retain that information in turn.

THEORETICAL BACKGROUND

This group problem solving quiz method was devised as an attempt to apply several principles from cognitive and social psychology. From the cognitive standpoint, Craik and Tulving's (1975) work on levels of processing suggested that the more sophisticated forms of processing information such as evaluating how it does or does not relate to other information and making use of the information to address a particular situation will make it more likely to be retained in memory and even easier to retrieve. After I began using this method, I ran across Dansereau's (1983) research on learning strategies, which suggests that readers can improve retention by selecting important concepts and facts and organizing them in a network by thinking of ways to link the terms. This provided further support for requiring students to write down the links between their concept in a given chapter and the other concepts in that chapter.

Bransford and Stein's (1993) IDEAL problem solving model proved to be a helpful way to teach students about systematically addressing important factors in solving any problem, as well as providing a good introduction to empirical reasoning. Giving students the opportunity to evaluate the relevance of given information, structure a problem, propose alternative solutions, anticipate the outcomes of those solutions, and evaluate the process involved gives them practice in "thinking like a psychologist."

The social psychology input to this method is primarily influenced by the educational psychologists Johnson & Johnson (1987), although Sherif (1966) and Aronson (1988) also contributed significantly. Not only are cooperative learning strategies at least as effective as competitive ones in many instances, they are

actually more effective in most when properly structured, especially with regard to the kinds of tasks this method requires (Johnson & Johnson, 1987). The use of menus of concepts which are divided among students within a group is a variant of the "Jigsaw Classroom" method of cooperative learning (Aronson, 1988; Johnson & Johnson, 1987). Working in groups also has many desirable effects such as providing a chance to create superordinate goals that help students appreciate diversity while enhancing their skills in cooperation (Sherif, 1966; Aronson, 1988).

Since the capacity for working in groups is an important component of this method of classwork and testing, Peer Evaluation Forms are provided which list ten important behaviors for task and relationship maintenance within groups, and time is always scheduled for groups to reflect upon how effective their group process was and what can be improved. (Johnson and Johnson, 1987). I recommend a review class prior to the quiz to discuss and practice group problem solving skills and in addition, some time to process these issues when you return the quiz.

APPLICATION

The process involves choosing key concepts or chapter headings from any given assigned chapter. These "menus" of concepts are composed of the information and ideas the teacher feels are most important; often they can contain several related terms or basic concepts. For example, if the chapter covered is one on Social Psychology, the concepts might be as follows:

(1). Social cognition & the fundamental attribution error
(2). Impression formation & attraction
(3). Attitude formation & change
(4). Attitudes, behavior, and ethnocentrism
(5). Group decision making and performance
(6). Conformity, compliance, & obedience
(7). Altruism
(8). Aggression

[This example is derived from Lester Sdorow's text *Psychology (1995)*]. Individual instructors would, of course, decide which concepts they wished to focus on in a chapter. While all students are required to read and be familiar with **all** of the assigned chapter, they will be assigned semi-randomly or randomly to groups of four or five, ideally, but no more than six (semi-random assignment involves asking students to count off from one to *n*, *n* being the number of students in the class divided by the desired group size, then rounded down). In the above example of concepts, I'd recommend using a group size of four, and requiring each member to choose two concepts. If the class is not evenly divisible by whatever group size you select, randomly divide the remainder among the existing groups and have the additional members choose their concepts from the same menu. Thus, each member of each group will choose a particular concept or concepts to specialize in (which, to repeat, does not exempt them from the requirement of reading the whole chapter).

All students in a class are also required to prepare a Concept

Sheet, where they compare and contrast their concept in a given chapter with the other concepts in that chapter. In the example given above, let's say that a student chose Concept #4, Attitudes, behavior, and etnocentrism. Their Concept Sheet should contain comparisons and contrasts of how this concept does (or does not) relate to Concepts (1), (2), (3), (5), (6), (7), and (8). As an appendix, I have included a sample concept sheet, which will be important to share with your students prior to the quiz. Since it is rare that one covers an entire textbook, choose a chapter you're not covering to demonstrate how a concept sheet should be done. In the early part of the semester, it helps to let the students bring their Concept Sheet in with them to the quiz, although I suggest having them limit it to no more than both sides of a 8.5x11" sheet.

In class, students work in groups to figure out how to apply their understandings of their concepts to common situations (some more detailed and clearly specified than others). For example, they may work on a question such as "What principles of social psychology apply to situations where you agree to do something in a group that you aren't really interested in doing, say, going with a group of your friends to see a movie that you're pretty sure will be boring?" A deliberate attempt is made to not constrain the situation too much in order to give the students practice at considering what factors might be relevant in such a situation. They are also encouraged to add or qualify any information given in the scenarios if they see a need to do so in order to apply their concepts effectively; the main requirement is that they clearly connect the additional information with the concept and support their reasoning.

Testing is done in essentially the same format as the classroom exercises, albeit a bit more formalized. Quizzes are evaluated on the basis of (1). Adequacy of application of concepts to the scenario; (2). Adequacy of statement of the concept; (3). Effectiveness of use of the IDEAL problem solving approach; (4). Wideness of range of concepts brought to bear effectively on the problem; and (5). Effectiveness of teamwork. To elaborate a bit, it is important for students to either explain how aspects of the scenario exemplify the concept in action, or to explain clearly how they would apply the concept to the scenario in order to address the question. Using the above example of agreeing to go to a movie you feel is boring, a response that identified the possible operation of conformity or compliance effects within a group of friends would be an effective way of addressing the question, especially if they discussed ideas such as reference group and normative influence in the context of this scenario.

The advantages of this group problem solving method for psychology classes (while particularly helpful for Intro, I have also used it for Cognitive and a slightly modfied version for Principles of Behavior Change) are that it makes use of the learning and practice of problem solving, critical thinking, and group interaction skills to learn the content of your subject area.

The reports of many of my students over the past three years who have gone on as psychology majors from Intro do seem to indicate that they feel more comfortable in their practica and other courses that stress application of material. A further advantage is that it exposes students to skills of working in groups, which most college graduates working in managerial or professional capacities after graduation will need to do at one point or another.

The disadvantages of this method are that it does require that you cut down on the amount of material that you can cover so as to allow time to acquaint them with problem solving techniques and teamwork skills and the discomfort that students sometimes have with working in groups, especially when they are being tested. I console myself with the thought that it is better for students to have a working grasp of less information than a compendium of terms and ideas which they can't see the point of knowing. Dealing with the discomfort that some students (usually the ones with the highest GPAs) have in being in an interdependent learning and grading situation requires some honesty up front about potential problems in relying on others and an emphasis on various incentives for high individual performance (e.g., bonuses for particularly effective use of one's concepts).

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APPENDIX:
SAMPLE CONCEPT SHEET

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Concept #4: Self-monitoring: Affects how consistent attitudes are with behavior. Hi self-monitors adapt behavior to fit situations & lo self-monitors are relatively consistent in behavior across situations. So, lo self-monitors show more consistency between their attitudes & their behaviors. The more specific the connection between the attitude & the corresponding behavior, the more predictive the attitude is of the behavior. Cognitive dissonance: Festinger's theory that having ideas that are inconsistent with each other causes an unpleasant state of tension. The tension is relieved if you can limit how responsible you feel for the inconsistency (if you're paid $20 to lie about how boring a task was, you'll have little dissonance because the $ was justification enough for lying), or by changing your attitudes (if you're paid $1, you'll tend to change your opinion of how boring the task was). Self-perception: Bem argued that we infer our own attitudes by observing our behavior, much in the same way we infer other's attitudes. Bem's theory seems to better explain the effects of behavior on poorly-defined attitudes, while Festinger's better explains the effects of behavior on well-defined attitudes. Prejudice: A positive or negative attitude toward a person based on his or her membership in a particular group. Discrimination is acting on one's prejudices. Authoritarian personality: A personality pattern characterized by by being obedient to superiors & domineering to subordinates (authoritarianism), prejudiced in favor of their own group & against other groups (ethnocentrism), and unwilling to accept their own faults but willing to place them on members of other groups (projection). factors influencing the development of the authoritarian personality are parents who give little affection, rely on physical punishment, and refuse to accept any backtalk. Jigsaw method: By giving classmates from varied ethnic groups different information that they have to combine later to solve problems, you can reduce prejudice and promote more liking by promoting inter-group cooperation. It doesn't always work, though, because if group efforts fail, members of one group may attribute the responsibility for this to the members of the other group.

Concept #1 Key Terms: Kelley's attributional principles (consistency, distinctiveness, & consensus), Weiner's attributional dimensions (internal/external, stable/unstable), fundamental attribution error, actor-observer bias, self-serving bias. How it Relates: prejudice relates to the fundamental attribution error & actor-observer bias because of the over-reliance on dispositional explanations for other's behavior (since we know more about our situational constraints than anyone else's). Self-monitoring relates to Kelley because low self-monitors are likely to be highly consistent & low in distinctiveness, which could lead to more dispositional attributions being made about their behavior.

Concept #2 Key Terms: Impression management, social schemas, stereotypes, self-fulfilling prophecy, proximity, similarity, mere exposure effect, self-disclosure. How it Relates: the authoritarian personality relates to social schemas & stereotypes because these are cognitive processes that are overused by this personality type. Self-perception theory could relate to the self-fulfilling prophecy in that our acting in certain ways shapes our attitudes, which could lead to our acting in the same ways again in the future.

Concept #3 Key Terms: Attitude, social learning theory, peripheral route, central route, credibility (trustworthiness, attractiveness, & similarity), two-sided argument. How it Relates: authoritarian personalities would be more susceptible to persuasion through peripheral routes from sources perceived as similar to them.

Concept #5 Key Terms: Group, group polarization, risky shift, groupthink, social facilitation, social loafing. How it Relates: the jigsaw method could be undermined by social loafing, or it could be helped by social facilitation (depending on the skill level of the members). Authoritarian personalities are more susceptible to groupthink.

Concept #6 Key Terms: Conformity, compliance, foot-in-the-door technique, door-in-the-face technique, obedience. How it Relates: foot-in-the-door technique relates to either self-perception theory or cognitive dissonance theory ("I signed the petition for the candidate, so he can't be all that bad. Maybe it's OK to post a sign for him in my yard").

Concept #7 Key Terms: Altruism, negative state relief theory, bystander intervention, diffusion of responsibility. How it Relates: social loafing could be a factor in diffusion of responsibility and lack of bystander intervention (especially when there is a lack of perceived expertise).

Concept #8 Key Terms: Catharsis, frustration-aggression hypothesis, observational learning, deindividuation. How it Relates: authoritarian personalities are though to be developed in part via operation of the frustration-aggression hypothesis.

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